

**SONY**

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BLACK AND WHITE MONITOR

**SSM-930/930CE**

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**SERVICE MANUAL**

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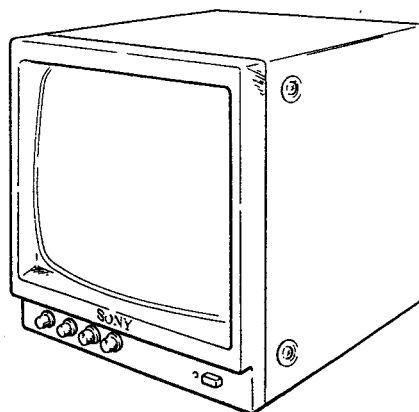


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**SAFETY RELATED COMPONENT WARNING**

Components identified by shading and  $\Delta$  marked on the schematic diagrams and parts list are critical to safe operation. Replace these components with SONY parts whose part numbers appear as shown in this manual or in supplements published by SONY.

## SSM - 930 only

**SAFETY CHECK-OUT**

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

Check the metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

**LEAKAGE TEST**

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

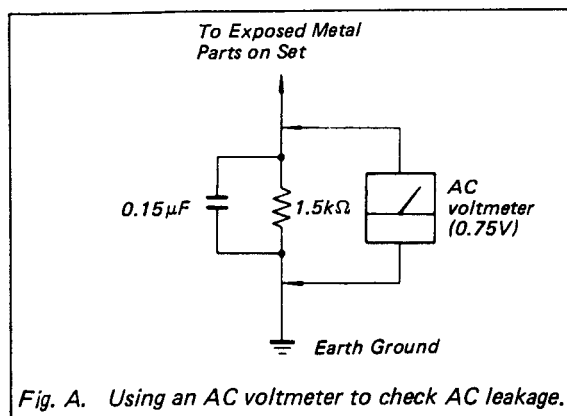


Fig. A. Using an AC voltmeter to check AC leakage.

## SSM - 930 only

**X-RAY RADIATION WARNING**

Be sure that parts replacement in the high voltage block and adjustments made to the high voltage circuits are carried out precisely in accordance with the procedures given in this manual.

## SECTION 1 GENERAL

### Precautions

#### SSM - 930

##### Safety

- Operate the unit only on 120 V AC, 60 Hz.
- Should any liquid or solid object fall into the cabinet, unplug the unit and have it checked by a qualified personnel before operating it any further.
- Unplug the unit from the wall outlet if it is not going to be used for several days or more. To disconnect the cord, pull it out by the plug. Never pull the cord itself.
- Allow adequate air circulation to prevent internal heat build-up. Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation holes.
- Height and vertical linearity controls located at the rear panel are for special adjustments by a qualified personnel only.

##### Installation

- Do not install the unit in an extremely hot or humid place or in a place subject to excessive dust or mechanical vibration.
- The unit is not designed to be waterproof. Exposure to rain or water may damage the unit.

##### Cleaning

Clean the unit with a slightly damp soft cloth. Use a mild household detergent. Never use strong solvents such as thinner or benzine as they might damage the finish of the unit.

#### SSM - 930CE

##### Safety

- Operate the unit only on 220 V AC, 50/60 Hz.
- Should any liquid or solid object fall into the cabinet, unplug the unit and have it checked by a qualified personnel before operating it any further.
- Unplug the unit from the wall outlet if it is not going to be used for several days or more. To disconnect the cord, pull it out by the plug. Never pull the cord itself.
- Allow adequate air circulation to prevent internal heat build-up. Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation holes.
- Height and vertical linearity controls located at the rear panel are for special adjustments by a qualified personnel only.

##### Installation

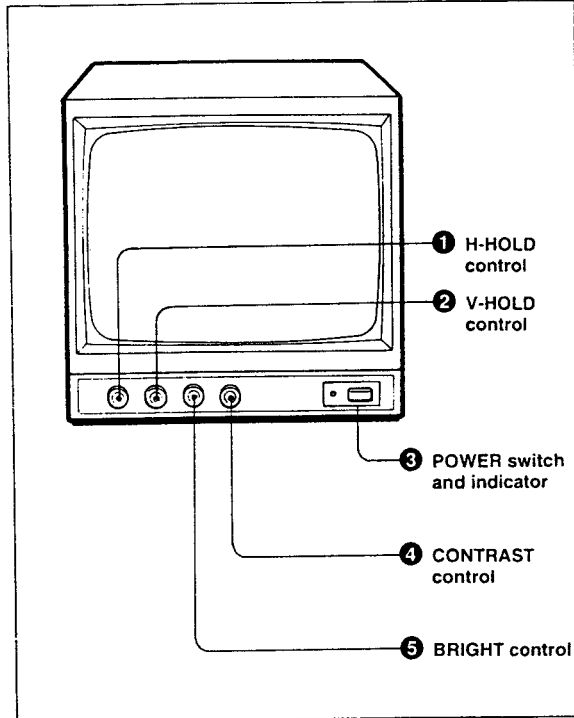
- Do not install the unit in an extremely hot or humid place or in a place subject to excessive dust or mechanical vibration.
- The unit is not designed to be waterproof. Exposure to rain or water may damage the unit.

##### Cleaning

Clean the unit with a slightly damp soft cloth. Use a mild household detergent. Never use strong solvents such as thinner or benzine as they might damage the finish of the unit.

## Location and Function of Controls

### Front Panel



#### 1 H-HOLD (horizontal hold) control

When the picture has slanting horizontal bars, turn the H-HOLD control in either direction until a stationary picture is obtained.

#### 2 V-HOLD (vertical hold) control

When the picture rolls up or down on the screen, turn the V-HOLD control until a single stationary picture is obtained.

#### 3 POWER switch and indicator

To turn on the monitor, depress this switch. The green indicator lights up.  
To turn off the monitor, press the switch again.

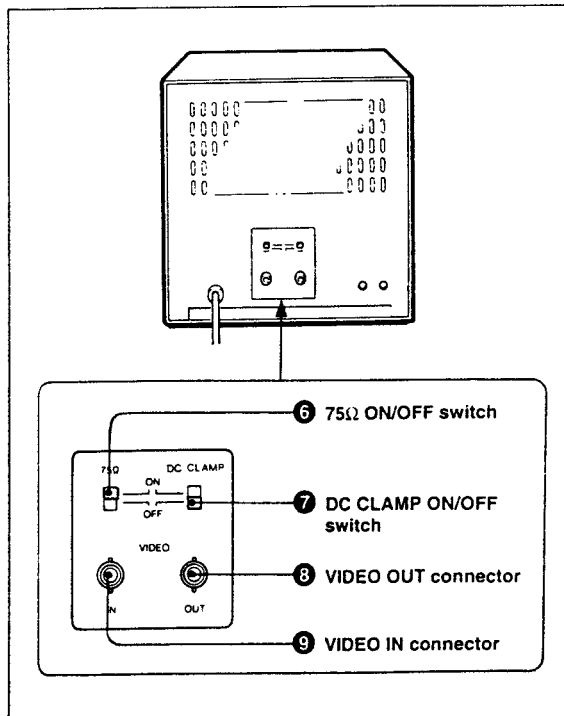
#### 4 CONTRAST control

Turn clockwise to increase picture contrast and counterclockwise to decrease it.

#### 5 BRIGHT (brightness) control

Turn clockwise for a brighter picture and counterclockwise for a darker picture.

### Rear Panel



#### 6 75Ω ON/OFF switch

Set to ON when you use only this monitor, or when you use this monitor as the last of the looped chain.  
Set to OFF when you connect another monitor to the VIDEO OUT connector.

#### 7 DC CLAMP ON/OFF switch

When the switch is set to OFF, the black and white part may become slightly gray.  
To reproduce the black and white part faithfully, set to ON.

#### 8 VIDEO OUT connector (BNC type)

Connect the video input of a VCR, or another monitor for loop-through connection.

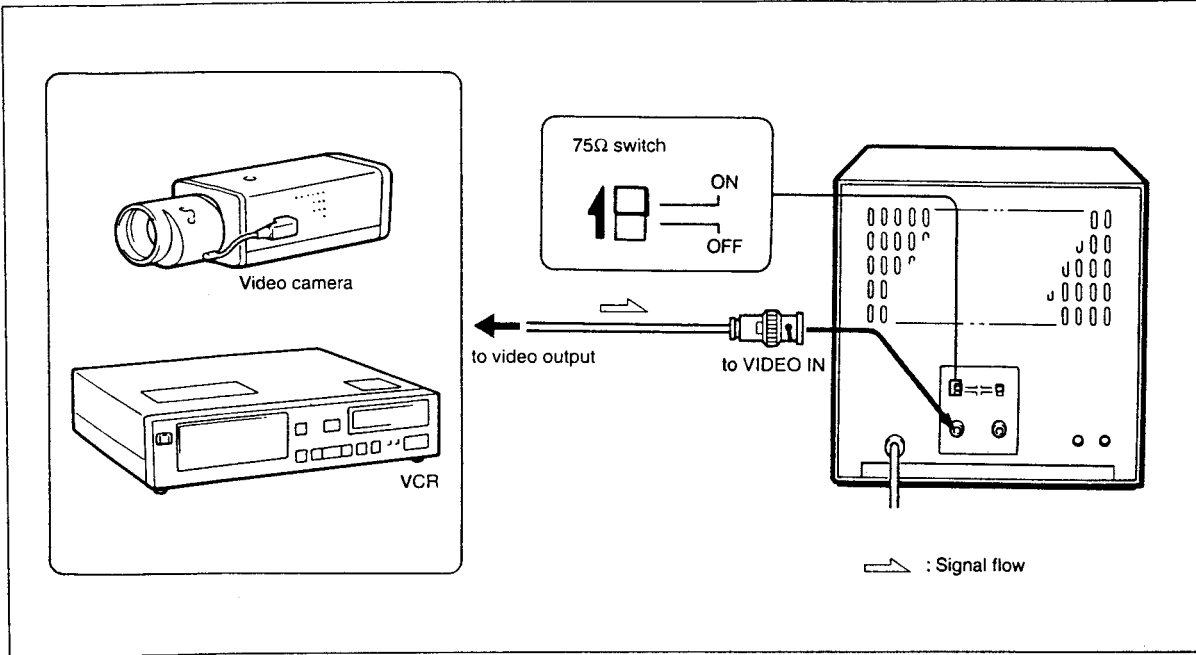
#### 9 VIDEO IN connector (BNC type)

Connect the video output of a VCR, video camera, or another monitor for loop-through connection.

## Connections

### Connecting a Video Camera or a VCR

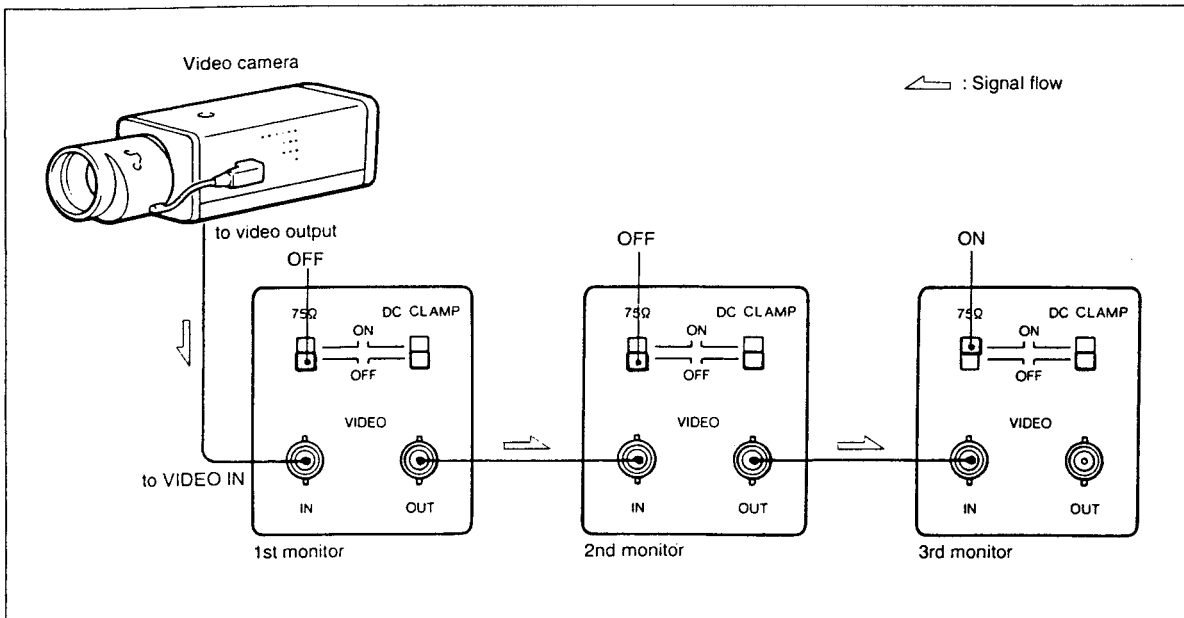
Connect the VIDEO IN connector to the video output of a video camera or a VCR.



### Connecting the Monitors

Using the loop-through feature of this unit, the same picture can be obtained on all the monitors connected. You can connect up to three monitors.

Adjust the picture contrast and brightness on each monitor.



# Specifications

## SSM - 930

System	EIA standard
Picture tube	9-inch picture measured diagonally 90-degree deflection
Resolution	More than 750 TV lines (horizontal)
Video input	Composite: 0.5—2 Vp-p, sync negative
Video input impedance	High impedance for loop-through; 75Ω terminated
Video output	Composite: 0.5—2 Vp-p, sync negative
Video output impedance	Over 10 kΩ
Power requirements	120 V AC, 60 Hz
Power consumption	27 W
Dimensions	220 x 119 x 246 mm (w/h/d) (8 3/4 x 4 3/4 x 9 3/4 inches)
Weight	Approx. 5.8 kg (13 lb.)

Design and specifications are subject to change without notice.

## SSM - 930CE

System	CCIR standard
Picture tube	About 23 cm (9-inch) picture measured diagonally 90-degree deflection
Resolution	More than 750 TV lines (horizontal)
Video input	Composite: 0.5—2 Vp-p, 75Ω, sync negative
Video input impedance	High impedance for loop-through; 75Ω terminated
Video output	Composite: 0.5—2 Vp-p, 75Ω, sync negative
Video output impedance	Over 10 kΩ
Power requirements	220 V AC, 50/60 Hz
Power consumption	30 W
Dimensions	220 x 219 x 246 mm (w/h/d) (8 3/4 x 8 5/8 x 9 3/4 inches)
Weight	Approx. 5.8 kg (13 lb.)

Design and specifications are subject to change without notice.

## SECTION 2 SAFETY RELATED ADJUSTMENT

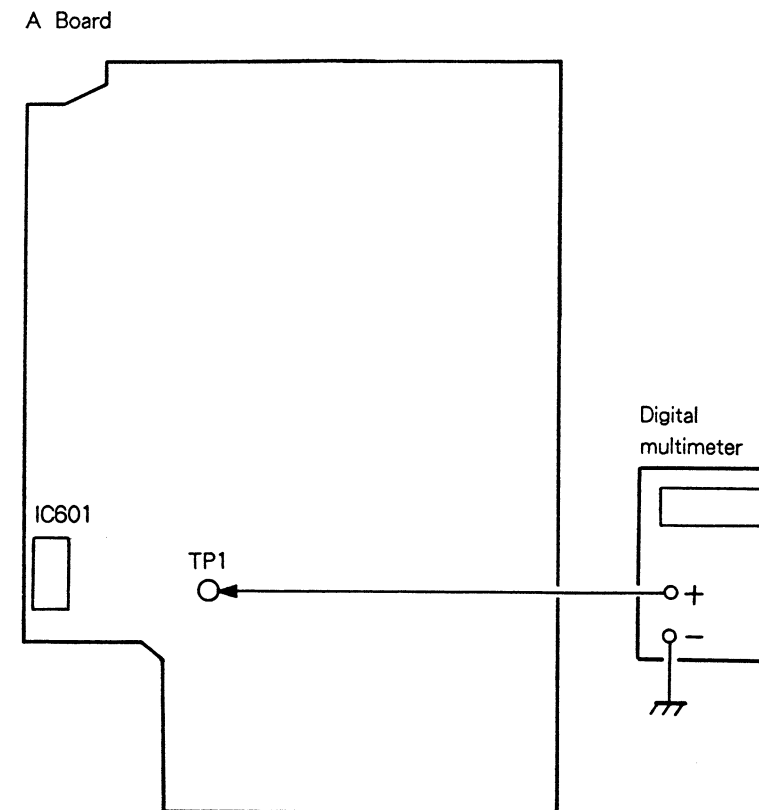
### (SSM - 930 only)

#### + B VOLTAGE CONFIRMATION (IC601)

The following adjustment should always be performed when replacing the following component (marked with  on the schematic diagram).

on A BOARD : IC601

1. Supply 130 +1 - 0 Vac 50 Hz with variable auto-transformer.
2. Receive monoscope signal.
3. Set the PICTURE control in to 80 % and BRIGHTNESS control in to DETENT.
4. Confirm the voltage of TP1 (A BOARD) is less than 13.8 Vdc.
5. If step 4 is not satisfied, replace IC601 and repeat above steps.



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## SECTION 2 SAFETY RELATED ADJUSTMENT

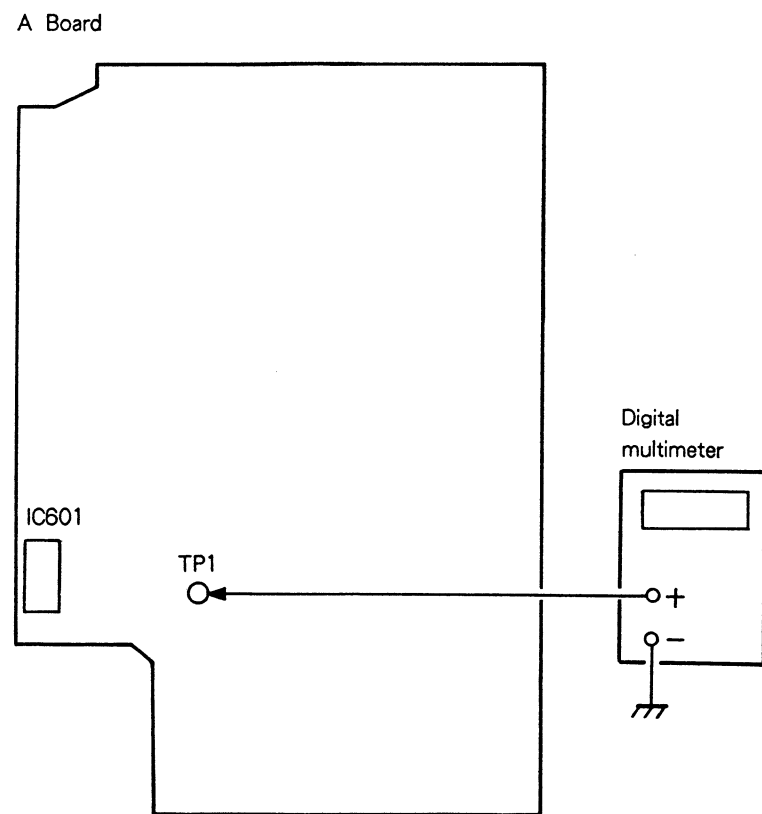
(SSM-930 only)

### + B VOLTAGE CONFIRMATION (IC601)

The following adjustment should always be performed when replacing the following component (marked with  on the schematic diagram).

 on A BOARD : IC601

1. Supply 130 +1 -0 Vac 50 Hz with variable auto-transformer.
2. Receive monoscope signal.
3. Set the PICTURE control in to 80 % and BRIGHTNESS control in to DETENT.
4. Confirm the voltage of TP1 (A BOARD) is less than 13.8 Vdc.
5. If step 4 is not satisfied, replace IC601 and repeat above steps.



## SECTION 3 ADJUSTMENT

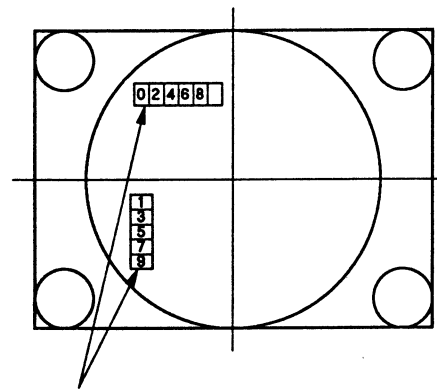
### SUB BRIGHTNESS Adjustment(RV401)

- If CRT is replaced, adjust follows.

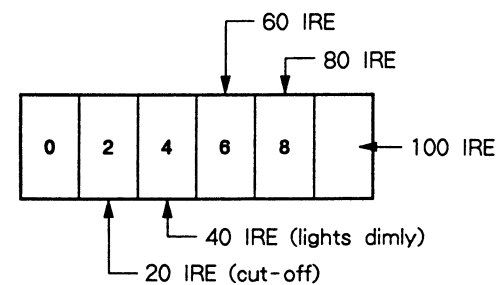
(SSM-930)

1. Receive a monoscope signal.(Use TSG-100/MTSG-1000 Pattern generator SONY Corp.)
2. BRIGHTNESS control..... Maximum  
CONTRAST control..... Maximum
3. Adjust RV401 so that 40 IRE part in 10 step grey scale may light dimly and that 20 IRE part may cut-off.

< monoscope signal >



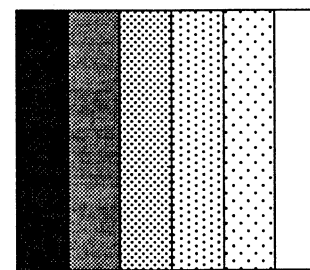
10 step grey scale



(SSM-930CE)

1. Receive 5 step stair case signal.(Use CCIR standard video signal generator.)
2. BRIGHTNESS control..... Maximum  
CONTRAST control..... Maximum
3. Adjust RV401 so that second part from left may cut-off and third part may light dimly.

< STAIR CASE >

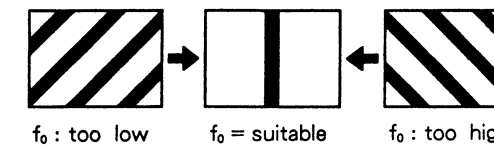
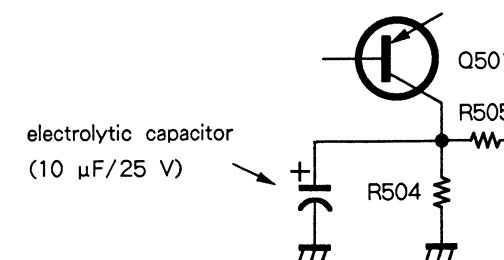


↑ ↑  
cut-off lights dimly

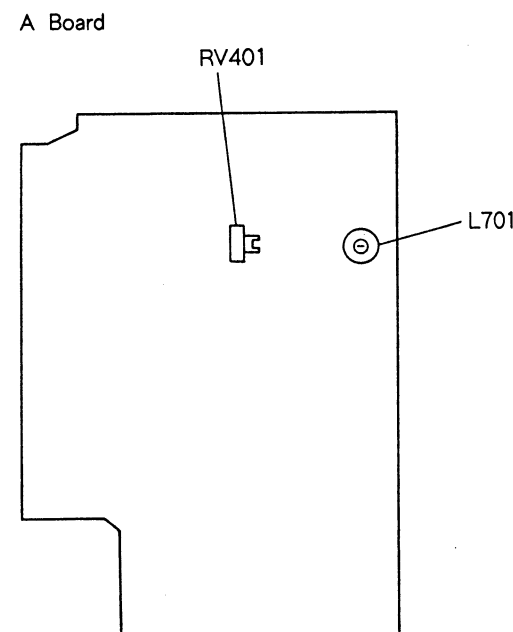
### H.FREQUENCY(L701)

- If semiconductors for oscillation and synchronizing circuit, or L701 are replaced, adjust as follows.

1. Receive a color-bar signal.
2. CONTRAST..... 80 %  
BRIGHTNESS..... 50 %  
RV701 (H.HOLD) .. MECHANICAL CENTER
3. Connect the electrolytic capacitor (10 μF/25 V) between the collector of Q501 and GND.
4. Adjust L701 so that disturbance on the screen stops.
5. Remove the electrolytic capacitor from Q501.



Adjustment point :





SECTION 4  
DIAGRAMS

4- 1. SCHEMATIC DIAGRAM

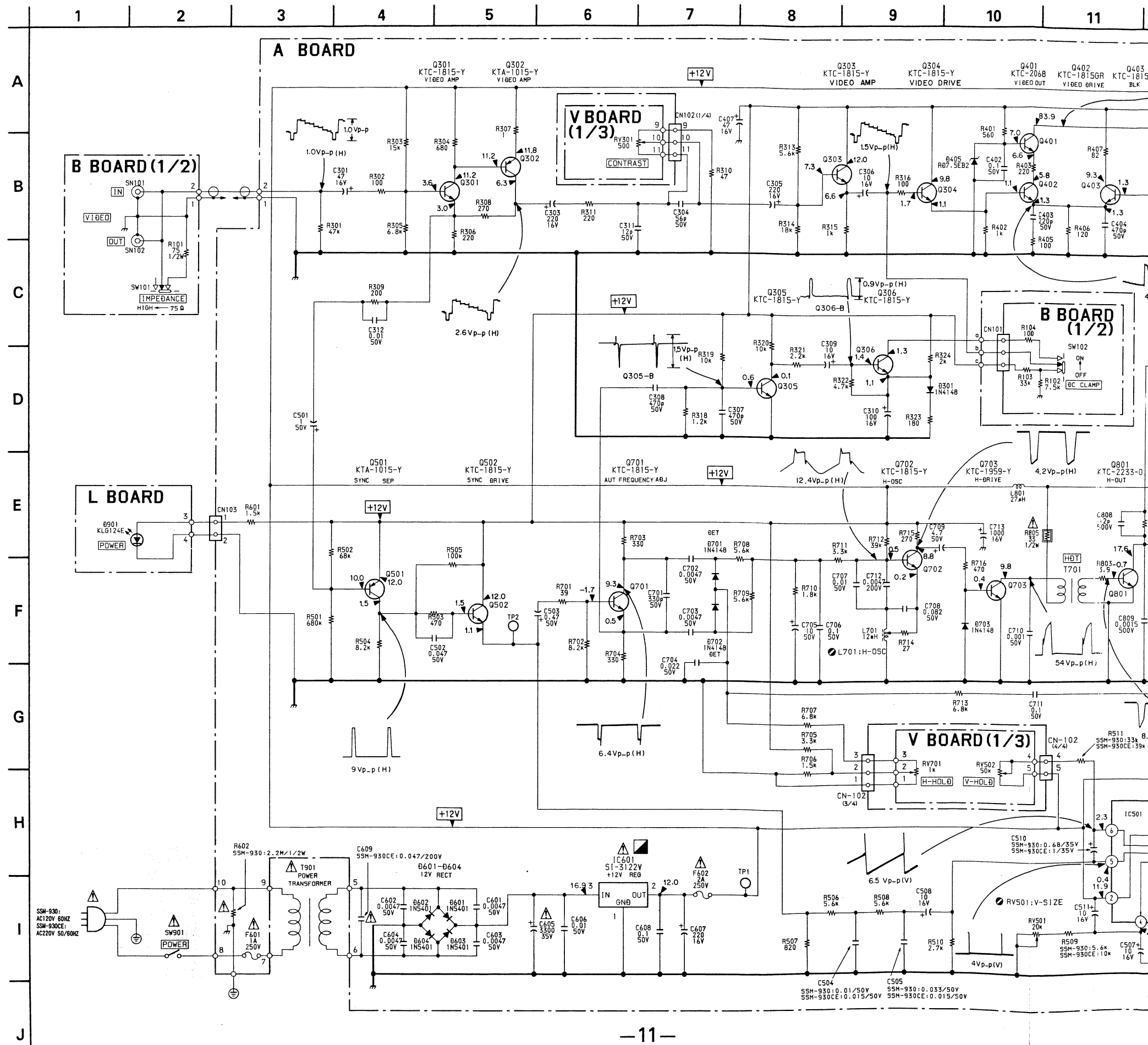
Note: The components identified by shading and mark  $\Delta$  are critical for safety. Replace only with part number specified.

Note:

- All capacitors are in  $\mu\text{F}$  unless otherwise noted. p:  $\mu\text{pF}$
  - 50 WV or less are not indicated except for electrolytics.
  - All resistors are in ohms, 1/4 W unless otherwise noted. k  $\Omega$  = 1000  $\Omega$ , M  $\Omega$  = 1000 k  $\Omega$
  - $\square$  :nonflamable resistor.
  - $\square$  :panel designation.
  - All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
  - When replacing components identified by  $\blacksquare$  mark the necessary adjustments indicated. (Refer to +B VOLTAGE CONFIRMATION Page 8)
- When replacing the part in below table, be sure to perform the related adjustment.

Part replaced ( $\blacksquare$ )	Adjustment
IC601	+ B VOLTAGE CONFIRMATION

- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken with a 10 M  $\Omega$  digital multimeter.
- Reading are taken with a color-bar signal to VIDEO IN.
- Voltage variations may be noted due to normal production tolerances.



A BOARD

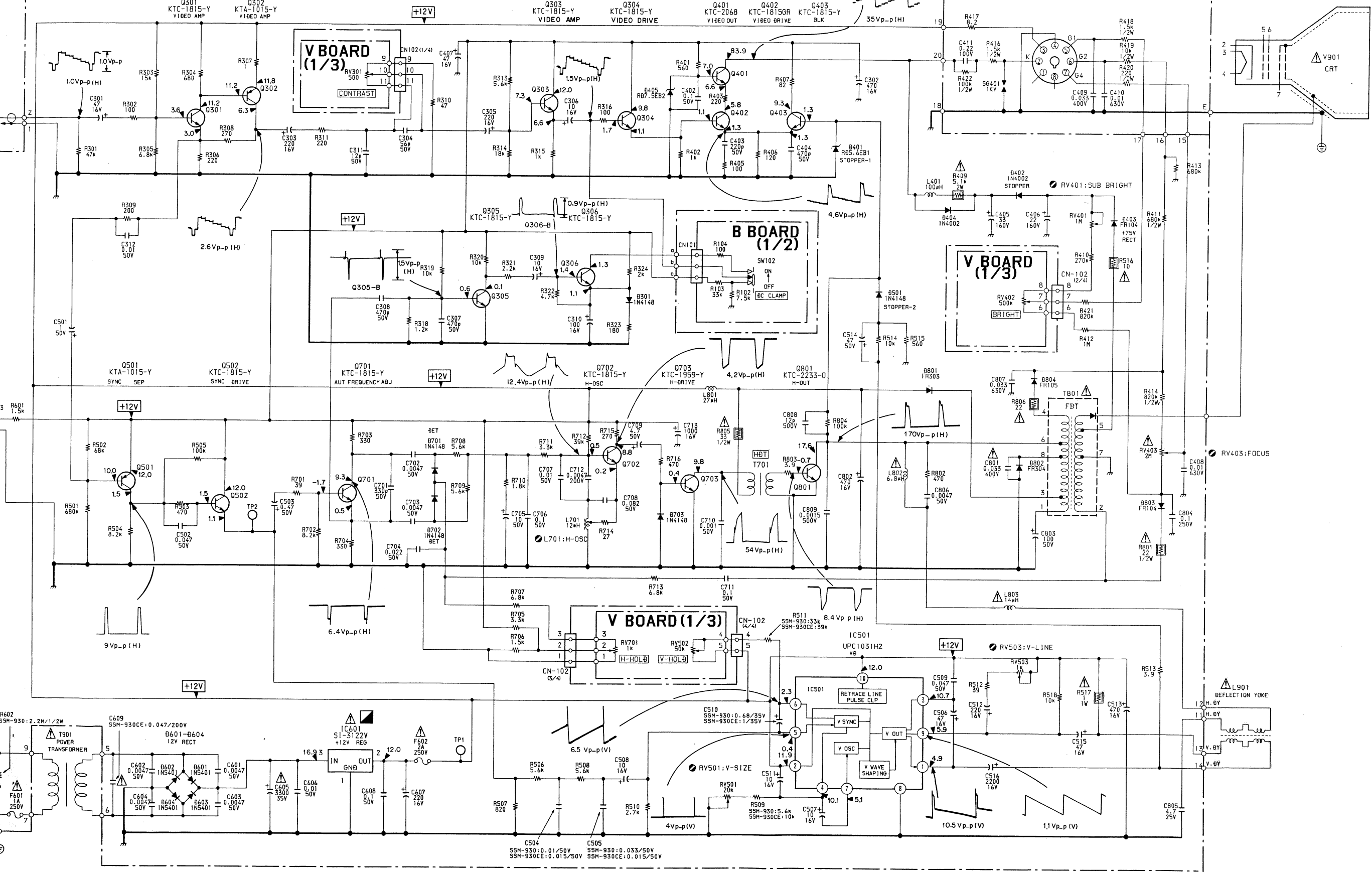
CRT BOARD

V BOARD (1/3)  
CONTRAST

B BOARD (1/2)  
DC CLAMP

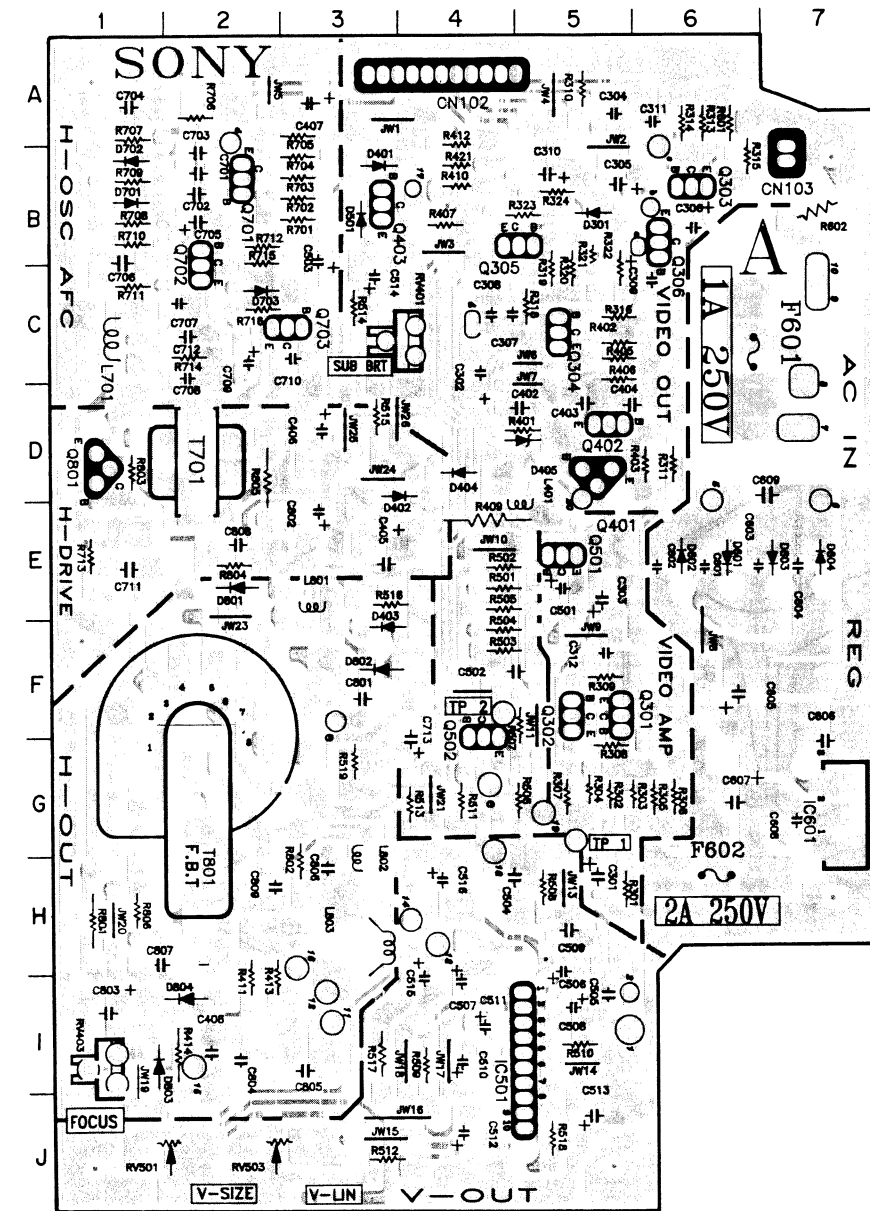
V BOARD (1/3)  
BRIGHT

V BOARD (1/3)  
H-HOLB V-HOLB



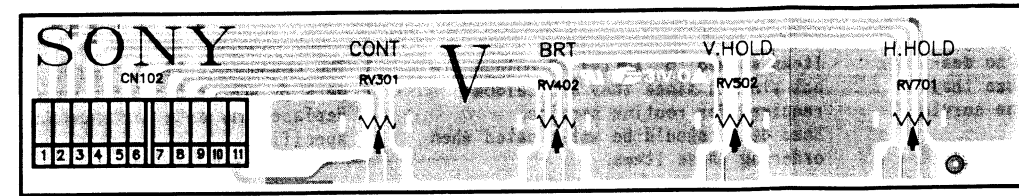
4-2. PRINTED WIRING BOARDS - Conductor Side -

- A Board -

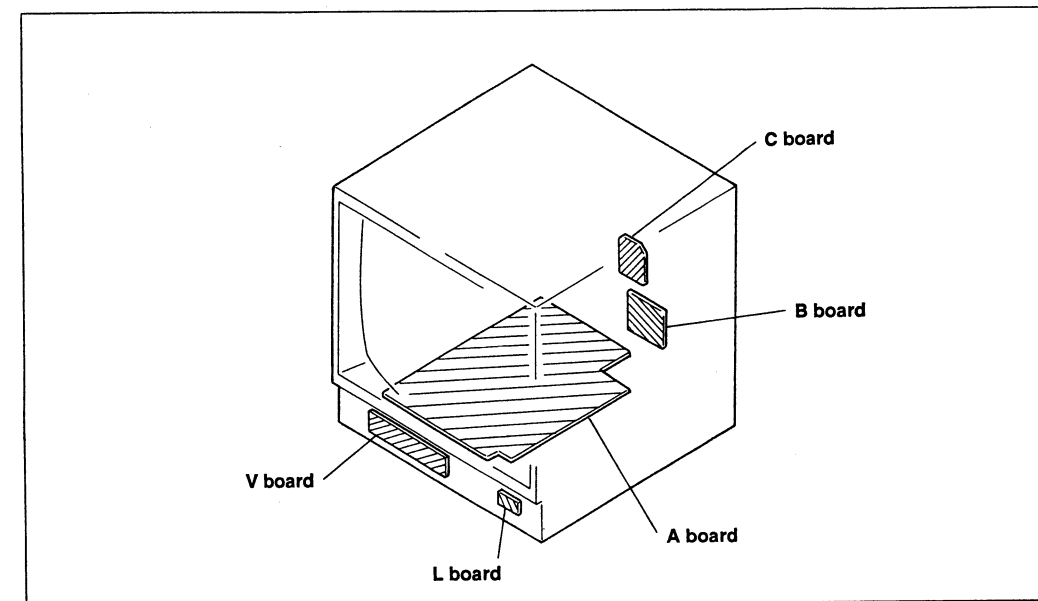


SEMICONDUCTOR LOCATION

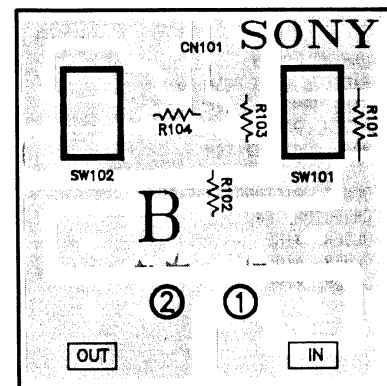
Ref. No.	Location
D301	B-5
D401	B-3
D402	F-3
D403	F-3
D404	D-4
D405	D-5
D501	B-3
D601	F-6
D602	F-6
D603	F-7
D604	F-7
D701	B-1
D702	B-1
D703	C-2
D801	F-2
D802	F-3
D803	I-1
D804	I-2
IC501	I-4
IC601	G-7
Q301	F-5
Q302	F-5
Q303	B-6
Q304	C-5
Q305	B-4
Q306	B-6
Q401	D-5
Q402	D-5
Q403	B-3
Q501	F-5
Q502	G-4
Q701	B-2
Q702	B-2
Q703	C-2
Q801	D-1



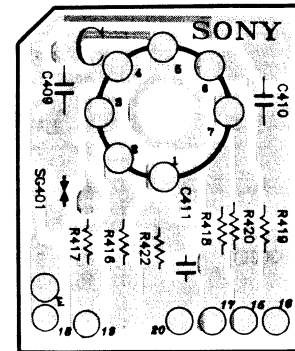
4-3. CIRCUIT BOARD LOCATION



- B Board -



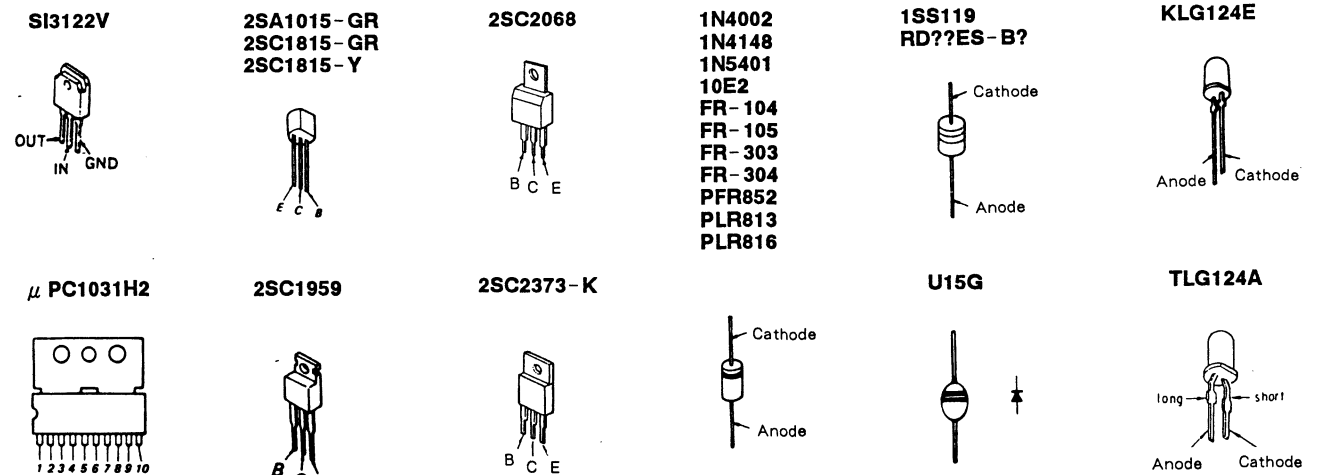
- C Board -



- L Board -



4-4. SEMICONDUCTORS



## SECTION 5 REPAIR PARTS

### [NOTE]

Items with no part number and no description are not stocked because they are seldom required for routine service.

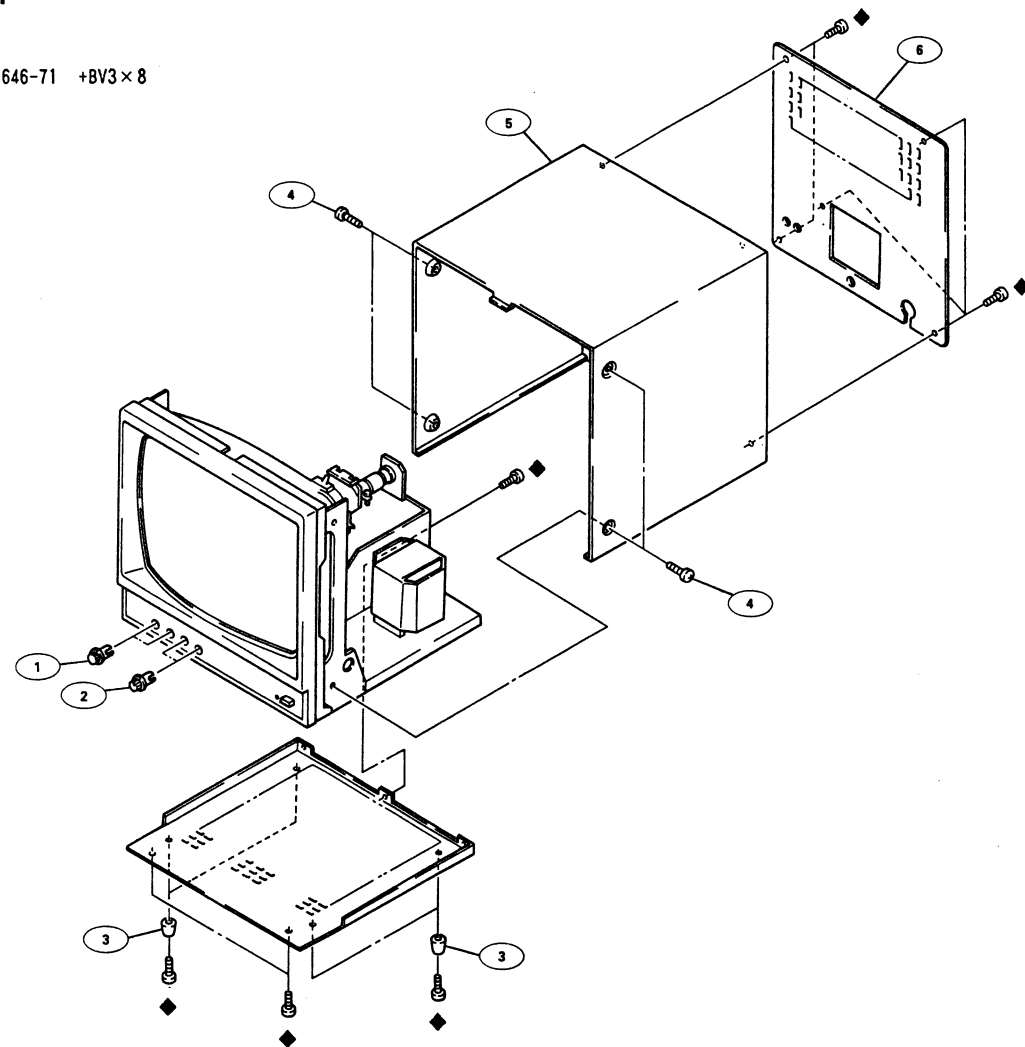
All resistors are in ohms.

Items marked "o" in the SP column are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by mark  $\Delta$  are critical for safety. Replace only with part number specified.

### 5-1. EXPLODED VIEWS CABINET

◆:7-685-646-71 +BV3×8

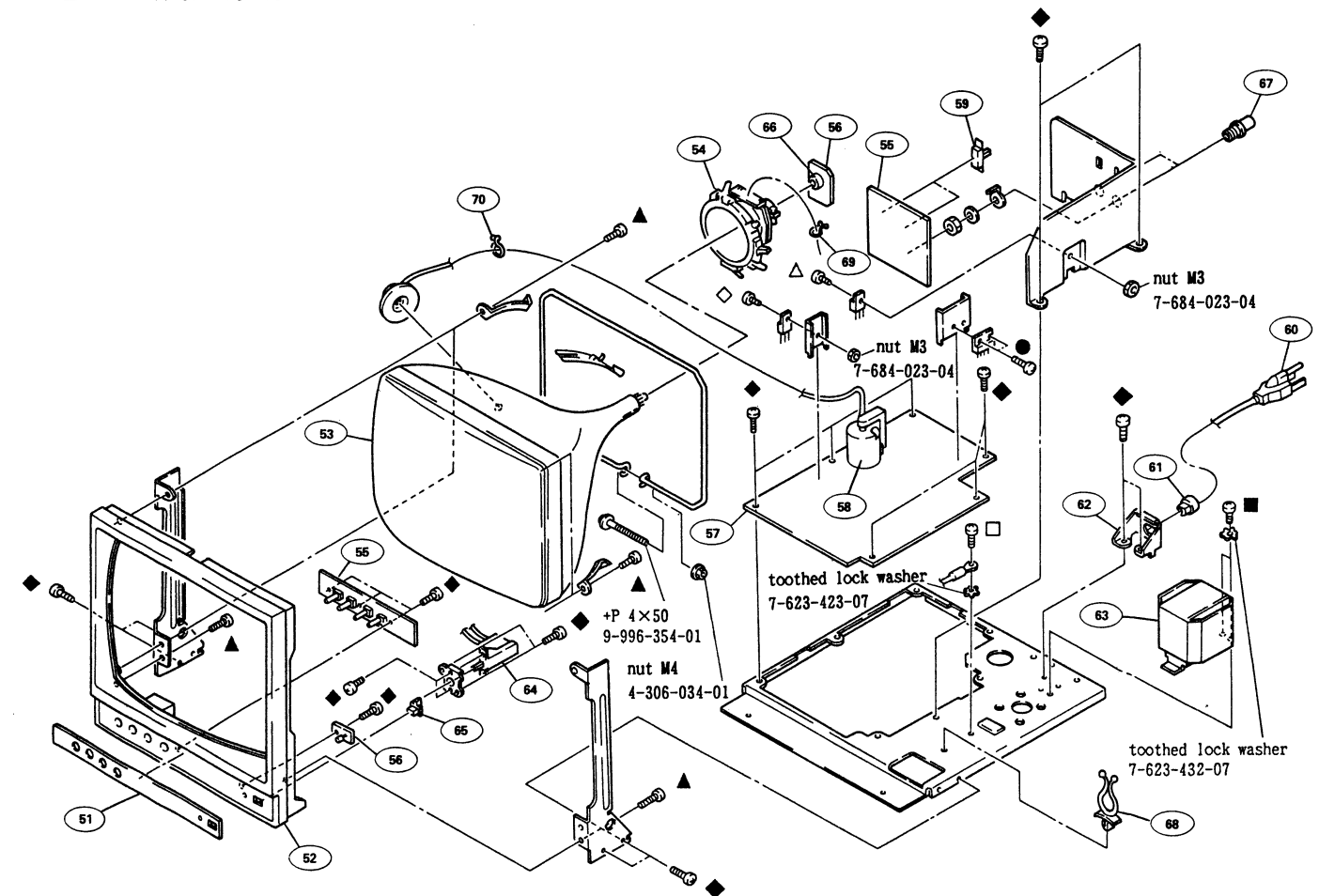


No.	Part No.	SP Description
1	3-708-061-01	s KNOB, CONTROL (B)
2	3-708-060-01	s KNOB, CONTROL (A)
3	3-708-422-01	s FOOT

No.	Part No.	SP Description
4	9-996-355-01	s ORNAMENTAL SCREW 4×8
5	3-708-414-01	o COVER, TOP
6	3-708-416-01	o COVER, BACK

### PICTURE TUBE AND BOARDS

◆:7-685-646-71 +BV3×8  
 ■:7-685-659-71 +BV4×8  
 ▲:7-685-661-21 +BV4×12  
 ●:7-685-645-71 +BV3×6  
 ◇:7-682-148-01 +P3×8  
 □:7-682-161-01 +P4×8  
 △:7-682-150-01 +P3×12



No.	Part No.	SP Description
51	3-708-424-01	s PLATE, CONTROL (SSM-930)
	3-708-464-01	s PLATE, CONTROL (SSM-930CE)
52	3-708-413-01	s MASK, FRONT
53	△9-996-348-01	s PICTURE TUBE (9" B/W)
54	△9-996-344-01	s DEFLECTION YOKE

55	9-902-633-01	o PRINTED CIRCUIT BOARD, B+V
56	9-902-632-01	o PRINTED CIRCUIT BOARD, A+CRT+L
57	9-902-631-01	o MOUNTED CIRCUIT BOARD, A (SSM-930)
	9-903-464-01	o MOUNTED CIRCUIT BOARD, A (SSM-930CE)
58	△9-996-346-01	s TRANSFORMER, FLYBACK

59	9-996-349-01	s SWITCH, SLIDE
60	△1-557-377-11	s CORD, POWER (SSM-930)
	△9-997-672-01	s CORD, POWER (SSM-930CE)

No.	Part No.	SP Description
61	△2-045-063-01	s BUSHING, CORD
62	3-708-421-01	s BRACKET, CORD BUSHING
63	△9-996-347-01	s TRANSFORMER, POWER
64	△9-996-350-01	s SWITCH, POWER
65	3-708-423-01	s KNOB, POWER SWITCH

66	9-996-353-01	s SOCKET, PICTURE TUBE 7P
67	9-996-352-01	s CONNECTOR, BNC
68	3-701-831-01	s HOLDER, WIRE
69	3-701-748-01	s HOLDER, WIRE
70	3-701-749-01	s HOLDER, WIRE

## 5-2. ELECTRICAL PARTS LIST

## A BOARD

Ref. No. or Q'ty	Part No.	SP Description
1pc	9-902-631-01	o MOUNTED CIRCUIT BOARD, A (SSM-930)
1pc	9-903-464-01	o MOUNTED CIRCUIT BOARD, A (SSM-930CE)
2pcs	1-533-189-11	s HOLDER, FUSE
C301	1-124-477-11	s ELECT 47uF 20% 25V
C302	1-126-103-11	s ELECT 470uF 20% 16V
C303	1-124-120-11	s ELECT 220uF 20% 25V
C304	1-101-884-00	s CERAMIC 56PF 5% 50V
C305	1-124-120-11	s ELECT 220uF 20% 25V
C306	1-124-907-11	s ELECT 10uF 20% 50V
C307	1-102-824-00	s CERAMIC 470PF 5% 50V
C308	1-102-824-00	s CERAMIC 470PF 5% 50V
C309	1-124-907-11	s ELECT 10uF 20% 50V
C310	1-126-101-11	s ELECT 100uF 20% 16V
C311	1-102-949-00	s CERAMIC 12PF 10% 50V
C312	1-136-153-00	s FILM 0.01uF 5% 50V
C402	1-136-165-00	s FILM 0.1uF 5% 50V
C403	1-102-978-00	s CERAMIC 220PF 5% 50V
C404	1-102-824-00	s CERAMIC 470PF 5% 50V
C405	1-123-949-00	s ELECT 33uF 20% 250V
C406	1-123-940-00	s ELECT 22uF 20% 200v
C407	1-124-477-11	s ELECT 47uF 20% 25V
C408	1-136-601-11	s FILM 0.01uF 5% 630V
C501	1-124-903-11	s ELECT 1uF 20% 50V
C502	1-136-161-00	s FILM 0.047uF 5% 50V
C503	1-124-902-00	s ELECT 0.47uF 20% 50V
C504	1-130-485-00	s MYLAR 0.015uF 5% 50V(SSM-930CE)
C504	1-136-153-00	s FILM 0.01uF 5% 50V(SSM-930)
C505	1-130-485-00	s MYLAR 0.015uF 5% 50V(SSM-930CE)
C505	1-136-159-00	s FILM 0.033uF 5% 50V(SSM-930)
C506	1-124-477-11	s ELECT 47uF 20% 25V
C507	1-131-365-00	s TANTALUM 10uF 10% 20V
C508	1-124-907-11	s ELECT 10uF 20% 50V
C509	1-136-161-00	s FILM 0.047uF 5% 50V
C510	1-131-347-00	s TANTALUM 1uF 10% 35V(SSM-930CE)
C510	1-131-587-11	s TANTALUM 0.68MF 5% 35V(SSM-930)
C511	1-124-907-11	s ELECT 10uF 20% 50V
C512	1-124-120-11	s ELECT 220uF 20% 25V
C513	1-126-103-11	s ELECT 470uF 20% 16V
C514	1-124-910-11	s ELECT 47uF 20% 50V
C515	1-124-477-11	s ELECT 47uF 20% 25V
C516	1-124-556-11	s ELECT 2200uF 20% 16V
C601	1-102-125-00	s CERAMIC 0.0047uF 10% 50V
C602	1-102-125-00	s CERAMIC 0.0047uF 10% 50V
C603	1-102-125-00	s CERAMIC 0.0047uF 10% 50V
C604	1-102-125-00	s CERAMIC 0.0047uF 10% 50V
C605	△9-996-854-01	s ELECT 3300uF
C606	1-102-129-00	s CERAMIC 0.01uF 10% 50V
C607	1-124-120-11	s ELECT 220uF 20% 25V
C608	1-161-063-00	s CERAMIC 0.1uF 10% 50V
C609	△1-108-700-11	s FILM 0.047uF 10% 200V (SSM-930CE)
C701	1-102-820-00	s CERAMIC 330PF 5% 50V
C702	1-130-479-00	s MYLAR 0.0047uF 5% 50V
C703	1-130-479-00	s MYLAR 0.0047uF 5% 50V
C704	1-136-157-00	s FILM 0.022uF 5% 50V
C705	1-124-907-11	s ELECT 10uF 20% 50V
C706	1-136-165-00	s FILM 0.1uF 5% 50V
C707	1-136-153-00	s FILM 0.01uF 5% 50V
C708	1-136-164-00	s FILM 0.082uF 5% 50V
C709	1-124-927-11	s ELECT 4.7uF 20% 100V

## (A BOARD)

Ref. No. or Q'ty	Part No.	SP Description
C710	1-130-471-00	s MYLAR 0.001uF 5% 50V
C711	1-136-165-00	s FILM 0.1uF 5% 50V
C712	1-136-287-11	s FILM 0.0047uF 5% 100V
C713	1-124-360-00	s ELECT 1000uF 20% 16V
C801	△1-129-720-00	s FILM 0.033uF 10% 630V
C802	1-126-103-11	s ELECT 470uF 20% 16V
C803	1-124-122-11	s ELECT 100 20% 50V
C804	1-136-345-21	s FILM 0.1uF 20% 300V
C805	9-996-565-01	s ELECT, NONPOLAR 47uF 25V
C806	1-130-479-00	s MYLAR 0.0047uF 5% 50V
C807	1-129-720-00	s FILM 0.033uF 10% 630V
C808	1-107-204-00	s MICA 12PF 5% 500V
CN101	9-902-635-01	o CONNECTOR ASSY 3P
CN102	9-902-634-01	o CONNECTOR ASSY 11P
CN103	9-902-636-01	o CONNECTOR ASSY 2P
D301	8-719-911-19	s DIODE 1SS119
D401	8-719-109-89	s DIODE RD5.6ES-B2
D402	8-719-200-02	s DIODE 10E2
D403	9-996-326-01	s DIODE PLR813
D404	8-719-200-02	s DIODE 10E2
D405	8-719-921-63	s DIODE MTZJ-7.5B
D501	8-719-911-19	s DIODE 1SS119
D601	8-719-902-17	s DIODE U15G
D602	8-719-902-17	s DIODE U15G
D603	8-719-902-17	s DIODE U15G
D604	8-719-902-17	s DIODE U15G
D701	8-719-911-19	s DIODE 1SS119
D702	8-719-911-19	s DIODE 1SS119
D703	8-719-911-19	s DIODE 1SS119
D801	9-991-583-01	s DIODE PFR852
D802	9-902-626-01	s DIODE FR304
D803	9-996-326-01	s DIODE PLR813
D804	9-996-327-01	s DIODE PLR816
F601	△1-532-279-00	s FUSE, TIME-LAG 0.5A 250V(SSM-930CE)
F601	△1-532-740-11	s FUSE, GLASS TUBE 1A 125V(SSM-930)
F602	△1-532-203-00	s FUSE, TIME-LAG 2A 250V(SSM-930CE)
F602	△1-532-743-11	s FUSE, GLASS TUBE 2A 125V(SSM-930)
IC501	8-759-110-31	s IC uPC1031H2
IC601	△8-749-931-22	s IC SI-3122V
L401	9-998-536-01	s INDUCTOR, MICRO 100uH
L701	9-996-340-01	s COIL, H-OSC
L801	1-410-668-11	s MICRO INDUCTOR 27uH
L802	△9-996-342-01	s COIL, HORIZONTAL LINEARTY
L803	△9-996-343-01	s COIL, H-WIDTH
P102	9-902-629-01	s CONNECTOR, MICRO 11P
P103	9-902-630-01	s CONNECTOR, MICRO 2P
Q301	8-729-281-52	s TRANSISTOR 2SC1815-Y
Q302	8-729-201-53	s TRANSISTOR 2SA1015GR
Q303	8-729-281-52	s TRANSISTOR 2SC1815-Y
Q304	8-729-281-52	s TRANSISTOR 2SC1815-Y
Q305	8-729-281-52	s TRANSISTOR 2SC1815-Y
Q306	8-729-281-52	s TRANSISTOR 2SC1815-Y
Q401	8-729-231-87	s TRANSISTOR 2SC2068
Q402	8-729-281-53	s TRANSISTOR 2SC1815-GR
Q403	8-729-281-52	s TRANSISTOR 2SC1815-Y
Q501	8-729-201-53	s TRANSISTOR 2SA1015GR

## SSM-930/930CE

(A BOARD)

Ref. No. or Q'ty	Part No.	SP Description
Q502	8-729-281-52	s TRANSISTOR 2SC1815-Y
Q701	8-729-281-52	s TRANSISTOR 2SC1815-Y
Q702	8-729-281-52	s TRANSISTOR 2SC1815-Y
Q703	8-729-231-83	s TRANSISTOR 2SC1959
Q801	8-729-137-31	s TRANSISTOR 2SC2373-K
R301	1-249-437-11	s CARBON 47K 5% 1/4W
R302	1-249-405-11	s CARBON 100 5% 1/4W
R303	1-249-431-11	s CARBON 15K 5% 1/4W
R304	1-249-415-11	s CARBON 680 5% 1/4W
R305	1-249-427-11	s CARBON 6.8K 5% 1/4W
R306	1-249-409-11	s CARBON 220 5% 1/4W
R307	1-249-381-11	s CARBON 1 5% 1/4W
R308	1-249-410-11	s CARBON 270 5% 1/4W
R309	1-247-814-11	s CARBON 200 5% 1/4W
R310	1-249-401-11	s CARBON 47 5% 1/4W
R311	1-249-409-11	s CARBON 220 5% 1/4W
R313	1-249-426-11	s CARBON 5.6K 5% 1/4W
R314	1-249-432-11	s CARBON 18K 5% 1/4W
R315	1-249-417-11	s CARBON 1K 5% 1/4W
R316	1-249-405-11	s CARBON 100 5% 1/4W
R318	1-249-418-11	s CARBON 1.2K 5% 1/4W
R319	1-249-429-11	s CARBON 10K 5% 1/4W
R320	1-249-429-11	s CARBON 10K 5% 1/4W
R321	1-249-421-11	s CARBON 2.2K 5% 1/4W
R322	1-249-425-11	s CARBON 4.7K 5% 1/4W
R323	1-249-408-11	s CARBON 180 5% 1/4W
R324	1-247-838-00	s CARBON 2K 5% 1/4W
R401	1-249-414-11	s CARBON 560 5% 1/4W
R402	1-249-417-11	s CARBON 1K 5% 1/4W
R403	1-249-409-11	s CARBON 220 5% 1/4W
R405	1-249-405-11	s CARBON 100 5% 1/4W
R406	1-249-406-11	s CARBON 120 5% 1/4W
R407	1-249-404-00	s CARBON 82 5% 1/4W
R409	△9-902-625-01	s METAL 5.1K 2W
R410	1-247-889-00	s CARBON 270K 5% 1/4W
R411	1-244-941-00	s CARBON 680K 5% 1/2W
R412	1-247-903-00	s CARBON 1M 5% 1/4W
R414	1-214-935-00	s CARBON 820K 1% 1/2W
R421	1-247-901-11	s CARBON 820K 5% 1/4
R501	1-247-899-11	s CARBON 680K 5% 1/4W
R502	1-249-439-11	s CARBON 68K 5% 1/4W
R503	1-249-413-11	s CARBON 470 5% 1/4W
R504	1-249-428-11	s CARBON 8.2K 5% 1/4W
R505	1-249-441-11	s CARBON 100K 5% 1/4W
R506	1-249-426-11	s CARBON 5.6K 5% 1/4W
R507	1-249-416-11	s CARBON 820 5% 1/4W
R508	1-249-426-11	s CARBON 5.6K 5% 1/4W
R509	1-249-426-11	s CARBON 5.6K 5% 1/4W(SSM-930)
R509	1-249-429-11	s CARBON 10K 5% 1/4W(SSM-930CE)
R510	1-249-422-11	s CARBON 2.7K 5% 1/4W
R511	1-249-435-11	s CARBON 33K 5% 1/4W(SSM-930)
R511	1-249-436-11	s CARBON 39K 5% 1/4W(SSM-930CE)
R512	1-249-400-11	s CARBON 39 5% 1/4W
R513	1-249-388-11	s CARBON 3.9 5% 1/4W
R514	1-249-429-11	s CARBON 10K 5% 1/4W
R515	1-249-414-11	s CARBON 560 5% 1/4W
R516	△1-247-688-11	s CARBON 10 5% 1/4W
R517	△1-216-349-00	s METAL OXIDE 1 5% 1W
R518	1-249-429-11	s CARBON 10K 5% 1/4W

(A BOARD)

Ref. No. or Q'ty	Part No.	SP Description
R519	△1-247-735-11	s CARBON 47 5% 1/2W
R601	1-249-419-11	s CARBON 1.5K 5% 1/4W
R602	△1-214-945-00	s METAL 2.2M 1% 1/2W(SSM-930)
R701	1-249-400-11	s CARBON 39 5% 1/4W
R702	1-249-428-11	s CARBON 8.2K 5% 1/4W
R703	1-249-411-11	s CARBON 330 5% 1/4W
R704	1-249-411-11	s CARBON 330 5% 1/4W
R705	1-249-423-11	s CARBON 3.3K 5% 1/4W
R706	1-249-419-11	s CARBON 1.5K 5% 1/4W
R707	1-249-427-11	s CARBON 6.8K 5% 1/4W
R708	1-249-426-11	s CARBON 5.6K 5% 1/4W
R709	1-249-426-11	s CARBON 5.6K 5% 1/4W
R710	1-249-420-11	s CARBON 1.8K 5% 1/4W
R711	1-249-423-11	s CARBON 3.3K 5% 1/4W
R712	1-249-436-11	s CARBON 39K 5% 1/4W
R713	1-249-427-11	s CARBON 6.8K 5% 1/4W
R714	1-249-398-11	s CARBON 27 5% 1/4W
R715	1-249-410-11	s CARBON 270 5% 1/4W
R716	1-249-413-11	s CARBON 470 5% 1/4W
R801	△1-247-731-11	s CARBON 22 5% 1/2W
R802	1-249-413-11	s CARBON 470 5% 1/4W
R803	1-249-388-11	s CARBON 3.9 5% 1/4W
R804	1-249-441-11	s CARBON 100K 5% 1/4W
R805	△1-247-733-11	s CARBON 33 5% 1/2W
R806	△1-247-692-11	s CARBON 22 5% 1/4W
RV401	9-996-331-01	s VOLUME, ADJ 1M (SUB BRT)
RV403	△9-996-333-01	s VARIABLE RESISTOR 2M (FOCUS)
RV501	9-996-336-01	s VOLUME, ADJ 1K (V-LIN)
RV503	9-996-334-01	s VOLUME, ADJ 22K (V-SIZE)
T701	9-996-345-01	s TRANSFORMER, HDT
T801	△9-996-346-01	s TRANSFORMER, FLYBACK

B BOARD

Ref. No.

or Q'ty	Part No.	SP Description
1pc	9-902-633-01	o PRINTED CIRCUIT BOARD, B, V
R101	1-247-213-00	s CARBON 75 5% 1/2W
R102	1-247-852-11	s CARBON 7.5K 5% 1/4W
R103	1-249-435-11	s CARBON 33K 5% 1/4W
R104	1-249-405-11	s CARBON 100 5% 1/4W
SN101	9-996-352-01	s CONNECTOR, BNC
SN102	9-996-352-01	s CONNECTOR, BNC
SW101	9-996-349-01	s SWITCH, SLIDE
SW102	9-996-349-01	s SWITCH, SLIDE

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C BOARD

Ref. No. or Q' ty	Part No.	SP Description
1pc	9-902-632-01	o PRINTED CIRCUIT BOARD, A, C, L
C409	1-129-720-00	s FILM 0.033uF 10% 630V
C410	1-136-601-11	s FILM 0.01uF 5% 630V
C411	1-136-169-00	s MYLAR 0.22uF 5% 50V
R416	1-247-754-11	s CARBON 1.5K 5% 1/2W
R417	1-249-392-11	s CARBON 8.2 5% 1/4W
R418	1-247-754-11	s CARBON 1.5K 5% 1/2W
R419	1-247-764-11	s CARBON 10K 5% 1/2W
R420	1-247-743-11	s CARBON 220 5% 1/2W
R422	1-249-496-11	s CARBON 100K 5% 1/2W
SG401	1-519-030-00	s DISCHARGE ELEMENT

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L BOARD

Ref. No. or Q' ty	Part No.	SP Description
1pc	9-902-632-01	o PRINTED CIRCUIT BOARD, A, C, L
D901	8-719-812-43	s LED TLG124A, GRN

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V BOARD

Ref. No. or Q' ty	Part No.	SP Description
1pc	9-902-633-01	o PRINTED CIRCUIT BOARD, B, V
RV301	9-998-538-01	s RES, ADJ (CARBON) 500
RV402	9-998-539-01	s RES, ADJ (CARBON) 500K
RV502	9-902-628-01	s RES, ADJ (CARBON) 50K
RV701	9-902-627-01	s RES, ADJ (CARBON) 1K

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FRAME

Ref. No. or Q' ty	Part No.	SP Description
1pc	△1-557-377-11	s CORD, POWER (SSM-930)
1pc	△9-997-672-01	s CORD, POWER (SSM-930CE)
L901	△9-996-344-01	s DEFLECTION YOKE
SW901	△9-996-350-01	s SWITCH, POWER
T901	△9-996-347-01	s TRANSFORMER, POWER
V901	△9-996-348-01	s PICTURE TUBE (12" B/W)

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PACKING MATERIALS & SUPPLIED ACCESSORIES

Ref. No. or Q' ty	Part No.	SP Description
1pc	3-708-427-11	s MANUAL, INSTRUCTION (SSM-930CE)
1pc	3-708-427-21	s MANUAL, INSTRUCTION (SSM-930)
1pc	3-708-433-01	o INDIVIDUAL CARTON (SSM-930)
1pc	3-708-463-01	o INDIVIDUAL CARTON (SSM-930CE)
4pcs	3-708-434-01	o CUSHION
1pc	3-707-780-01	o BAG, PROTECTION